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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,017	07/31/2001	William Alfred Reed	23-1	3689

7590

03/06/2003

Docket Administrator  
Lucent Technologies Inc.  
101 Crawfords Corner Road (Room 3J-219)  
Holmdel, NJ 07733-3030

EXAMINER

CONNOLLY, PATRICK J

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 03/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/919,017

Applicant(s)

REED ET AL

Examiner

Patrick J Connolly

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with corresponding address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 5, and 7-12 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. Patent No. 6,134,003 to Tearney et al. (hereafter referred to as Tearney).

As to claim 1, Tearney discloses an optical system for monitoring a sample including:

a probe (see Figure 7B, also column 9, lines 10-14) having an optical fiber (34) and a GRIN fiber-size lens (54) fused to one end of the fiber;

an optical splitter or circulator (see Figure 4, 130) to receive light from a source (2) and to direct a portion of the received light to the fiber; and

an optical detector (16) coupled to receive a portion of light collected from the sample by the GRIN fiber-size lens and to determine a characteristic of the sample from the received light.

As to claim 5, Tearney does not disclose an integral outer optical cladding layer for the GRIN fiber-size lens (see Figure 7B).

As to claim 7, Tearney discloses a monitoring system (see Figure 4) comprising an optical interferometer having measurement (110) and reference arms (188) both arms being optically coupled (106) to receive light from the splitter or circulator, the measurement arm including the probe.

As to claim 8, Tearney discloses an optical source capable of producing light with a coherence length of less than 1 cm (see col. 5, 1-30).

As to claim 9, Tearney teaches a variable path length in the reference arm (see Figure 4, 12).

As to claim 10, Tearney teaches a process for optically monitoring or imaging a sample including (see columns 5-7):

- directing light into an optical fiber;
- directing light from the fiber into a portion of the sample with a GRIN fiber size lens;
- receiving light in the GRIN fiber-size lens in response to the received light being scattered or emitted by a region of the sample; and
- transmitting the received light to a detector.

As to claims 11 and 12, Tearney discloses determining a number of sample properties based on receiving light (see col. 19 lines, 17-20), including properties of depth, density and velocity and producing a high resolution image of the sample with this data.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,134,003 to Tearney et al.

As to claims 2-4, various focal properties and frequency ranges for GRIN lenses are notoriously well known in the art. While Tearney does not teach rayleigh ranges specifically, it would have been obvious to one of ordinary skill in the art at the time of invention to include these limitations in the apparatus of Tearney, based on the properties of interest to be measured.

As to claim 6, a convex rounding of GRIN lenses is a notoriously well-known design in the art. While Tearney does not teach a convexly rounded GRIN lens specifically, it would have been obvious to one of ordinary skill in the art at the time of invention to include this design in the probe of Tearney.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J Connolly whose telephone number is 703.305.4397. The examiner can normally be reached on 9 am-5.30 pm ... Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 703.308.4881. The fax phone numbers for the organization where this application or proceeding is assigned are 703.746.7722 for regular communications and 703.746.7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0956.

pjc ptc  
February 27, 2003



**Samuel A. Turner**  
Primary Examiner